STABLE MILD LIQUID SOAP PERSONAL CLEANSER

CROSS-REFERENCE TO RELATED APPLICATION

This is a continuation-in-part of U.S. Patent Application Ser. No. 07/665,620, filed Mar.5, 1991,now U.S. Pat. No. 5,147,574.

TECHNICAL FIELD

The present invention is related to liquid soap products, especially pumpable facial cleansers and bath/-shower compositions which are formulated for mildness, viscosity control, and phase stability.

BACKGROUND ART

Liquid personal cleansing compositions are well known. Patents disclosing such compositions are U.S. Pat. Nos.: 3,697,644, Laiderman, issued Oct. 10, 1972; 3,932,610, Rudy et al., issued Jan. 13, 1976; 4,031,306, DeMartino et al., issued June 21, 1977; 4,061,602, Oberstar et al., issued Dec. 6, 1977; 4,387,040, Straw, issued June 7, 1983; and 4,917,823, Maile, Jr., issued April 17, 1990; 4,338,211, Stiros, issued July 6, 1982; 4,190,549, Imamura et al., issued Feb. 26, 1980; 4,861,507, Gervasio, issued Aug. 29, 1989; and Brit. Pat. No. 1,235,292, published *Jun.* 9, 1971; as well as in *Soap Manufacturer,* Davidson et al., Vol. 1, page 305, 1953.

U.S. Pat. No. 4,673,525, Small et al., issued June 16, 1987, incorporated herein by reference, discloses mild alkyl glyceryl ether sulfonate (AGS) surfactant based personal cleansing systems, primarily synbars.

Most liquid soaps comprise mostly "soluble," "unsaturated," shorter chains, e.g., lauric/oleic soaps for phase stability. This, however, compromises lather quality or mildness.

Brit. Pat. 1,235,292, supra, discloses a mix of K/Na soap; at least 5% K soap; and 0.1–5% alkyl cellulose. The '292 soaps are natural. Natural fatty acids contain some unsaturation and therefore have higher Iodine Values and lower titers. The '292 exemplified liquid soaps contain from about 17% to about 21.5% soap and up to 1% free fatty acid.

U.S. Pat. No. 4,387,040, supra, discloses a stable liquid K soap containing a viscosity controlling agent composed of coco-DEA and sodium sulfate. Saturated acid soaps of C_{12}–C_{14} are used. The viscosity of the '040 soap is 1,000–1,500 cps at 25° C., RVT/Spindle 3/10 rpm. Free fatty acid is not taught. Some of the '040 formulations contain electrolyte and polymeric thickener; but those formulations are disclosed as unstable. It should also be noted that lauric acid soap is a relatively harsh soap and when used at higher levels (as used in '040) works against product mildness.

Newtonian liquids which are too viscous are more difficult to pump than shear thinning liquids. Liquid "soap" products on the market today are mostly Newtonian or only slightly to moderately shear thinning liquids.

While it is known to use natural potassium (K) soap to make liquid cleansing compositions, there is no teaching or suggestion of solutions to certain problems encountered with superfatted, saturated, low Iodine Value (IV), higher fatty acid (FFA) soaps.

Specifically, phase stability, good lather, and viscosity control and stability are heretofore unsolved, or only partially solved, problems in this art.

While these previously disclosed liquid soap formulations are not subject, or are subject to a lesser degree, to one or more of the above-described deficiencies, it has been found that further improvements in physical stability and stability against rheological properties variations with time or temperature are desired to increase the shelf life of the product and thereby enhance consumer acceptance.

It is, therefore, an object of the present invention to provide a liquid cleansing bath/shower soap composition which is phase stable, shelf stable, lathers well, and is cosmetically attractive.

It is a further object of the present invention to provide a liquid soap cleansing composition which is relatively mild.

It is a still further object of the present invention to provide a viscous, high shear thinning liquid soap cleansing composition which is pumpable from a standard hand pressure pump container.

These and other objects of the present invention will become obvious from the detailed description which follows.

SUMMARY OF THE INVENTION

The present invention relates to a very mild, stable, liquid dispersoidal cleansing composition comprising: 55% to 907. water; 5% to 20% saturated (low IV) higher (high titer) fatty acid potassium soap; 2.5% to 18% of free fatty acids; said soap and said free fatty acids having a ratio of about 1:0.3 to 1:1; and wherein said liquid cleanser has a viscosity of 4,000 cps to about 100,000 cps at about 25° C.; and wherein said liquid cleanser is phase stable. The stable, mild liquid cleanser is preferably contained in a container having a pressure actuated pump. The composition is preferably made by the steps of:

1. heating and mixing an aqueous mixture of said potassium fatty acid soap and said free fatty acid to provide a stable melt;
2. cooling the melt to about room temperature;
3. diluting said cooled melt with water to provide said dispersoidal liquid.

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to a stable dispersoidal liquid soap cleansing composition comprising: 55% to 90%, preferably 60% to 80%, water; 5% to 20%, preferably 6% to 14%, of mostly insoluble saturated (low IV) higher fatty acid potassium soap; 2.5% to 18%, preferably 3% to 9%, of free fatty acids. The soap and the free fatty acids have a ratio of above about 1:0.3 to about 1:1 and preferably from about 1:0.3 to about 1:0.8. The preferred fatty acid matter is a mixture of the following saturated fatty acids on a total fatty matter basis:

- C_{12} at a level of about 7% ±5%; preferably 7% ±2%;
- C_{14} at a level of about 22% ±15%; preferably 22% ±5%;
- C_{16} at a level of about 32% ±10%; preferably 32% ±5%; more preferably 32% ±3%; and
- C_{18} at a level of about 39% ±10%; preferably 39% ±5%; more preferably 39% ±3%.

The fatty acid matter of the present invention has an IV of from zero to about 15, preferably below 10, more